

WEST Search History

DATE: Thursday, April 17, 2003

<u>Set Name</u> side by side	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u> result set
<i>DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ</i>			
L38	L37 and clean\$3	11	L38
L37	L36 or l35 or l34 or l33	100	L37
L36	pohl-klaus\$.in.	25	L36
L35	smith-dean\$.in.	64	L35
L34	albano-thomas\$.in.	10	L34
L33	ernst-gerard\$.in.	10	L33
<i>DB=USPT; PLUR=YES; OP=ADJ</i>			
L32	L30 and (curtain with air)	25	L32
L31	L30 and (curtain with stream)	7	L31
L30	L29 or l28	2347	L30
L29	((134/21 134/34 134/37)!.CCLS.)	2005	L29
L28	((15/1.51)!.CCLS.)	359	L28
L27	static control services	13	L27
L26	air injector and AN-6	1	L26
L25	L24	1	L25
L24	air injector same AN-6	1	L24
L23	air injector with AN-6	1	L23
L22	(air knife or transvector) nozzle	17	L22
L21	(air knife or transvector) with\$2 nozzle	0	L21
L20	(air knife or transvector) with2 nozzle	0	L20
L19	(air knife or transvector) with nozzle	131	L19
L18	L17 and eject\$3	0	L18
L17	5265298.pn.	1	L17
<i>DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
L16	curtain like stream	39	L16
L15	curtain like stream with air	11	L15
L14	L12 and curtain like stream	4	L14
L13	L12 same curtain like stream	4	L13
L12	air knife	9706	L12
L11	L10 same particle	75	L11
L10	L9 with clean\$3	373	L10

L9	L7 or l6	9838	L9
<i>DB=PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
L8	L7 or l6	2255	L8
L7	air knife or transvector	2255	L7
<i>DB=USPT; PLUR=YES; OP=ADJ</i>			
L6	air knife or transvector	7583	L6
L5	L3 and (air knife or knife or transvector)	0	L5
L4	L3 and (filter\$3 or filtr\$4)	1	L4
L3	5265298.pn.	1	L3
L2	L1 and (air flow or clean\$3)	7	L2
L1	young-raymond\$.in.	54	L1

END OF SEARCH HISTORY

L4 L3 and (interf\$ of m1u\$4)
L3 5265298.pn.
L2 L1 and (air flow or clean\$3)
L1 young-raymond\$.in.

1 L4
1 L3
7 L2
54 L1

END OF SEARCH HISTORY

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L32: Entry 19 of 25

File: USPT

Jan 29, 1991

DOCUMENT-IDENTIFIER: US 4987630 A

TITLE: Destaticizing and cleaning apparatus

Abstract Text (1):

Apparatus is disclosed for destaticizing and cleaning partially assembled items being transported on a continuously movable line, the apparatus comprises a housing which substantially surrounds the continuously movable line, static reduction apparatus which provides a static reduction zone within the housing, air input apparatus which provides air input into the housing, an air curtain through which the continuously movable line passes, and air exhaust apparatus which exhausts air from within the housing. The volumetric input of air provided by the air input apparatus is substantially equal to the volumetric output of air exhausted by the air exhaust apparatus so that substantially no movement of air occurs at the entrance to and exit from the housing. The air input apparatus removes substantially all dust and/or other foreign particles from the partially assembled items and holds them in suspension in the circulating air before being exhausted.

Brief Summary Text (4):

Apparatus for destaticizing and cleaning partially assembled items in accordance with the present invention comprises a housing which substantially surrounds a continuously movable line on which the partially assembled items are transportable, the housing having an entrance and an exit for the continuously movable line; static reduction means which provides a static reduction zone positioned within the housing through which the continuously movable line passes; air input means which provides air input into the housing, air circulation within the housing, and an air curtain through which the continuously movable line passes; and air exhaust means which exhausts air from within the housing; the volumetric input of air provided by the air input means being substantially equal to the volumetric output of air exhausted by the air exhaust means such that substantially no movement of air occurs at the entrance to and exit from the housing.

Brief Summary Text (5):

Static charge on the partially assembled items is reduced in the static reduction zone. The air curtain removes substantially all dust and/or other foreign particles from the partially assembled items, and the removed particles are held in suspension in the air circulating in the housing, before being removed by the air exhaust means.

Brief Summary Text (6):

Preferably, the air input means comprises a pressure regulator, a filter, a solenoid operated valve, and an air curtain unit. In this case, the air input means preferably comprises two air curtain units which are spaced apart and positioned to provide air curtains having converging air flows through which the continuously movable line can pass. Further, in this case, the apparatus preferably comprises two static reduction zones which are spaced apart and through which the continuously movable line can pass, the arrangement being, in order upstream from the entrance to the housing, the first static reduction zone, the first air curtain unit, the second air curtain unit, and the second static reduction zone. The filter removes oil and/or any other foreign particles from the air before it enters the housing. The solenoid operated valve prevents air entering the housing when the apparatus is not operating.

Detailed Description Text (3):

Air input means of the apparatus 10 is provided by a pressure regulator (not shown), a microfine oil filter (not shown), and a solenoid operated valve (not shown) which are connected in an air line 24 downstream of two air curtain units 26 positioned inside the housing 12. The solenoid operated valve blocks off the air supply to the apparatus 10 when the apparatus is not in use. The microfine oil filter removes oil and any other dust or foreign particles from the air prior to it entering the housing 12. The air curtain units 26 are spaced apart in such a manner as to provide air curtains 27 having converging air flows through which the instrument clusters pass, and also provide air movement (as indicated by arrows 28) within the housing 12. The flow of air from the air curtain units 26 blows dust or other foreign particles off the instrument clusters and holds it in suspension in the circulating air.

Detailed Description Text (4):

The apparatus 10 further includes air exhaust means which comprises two fans 30, each with there own air filter 32. The fans 30 draw air (which contains the suspended particles of dust or other foreign particles) from the housing 12 through the air filters 32 (which filters out the suspended particle), and then pushes the filtered air out though an exhaust outlet 34. The speed of the fans 30 is adjustable, and is set such that the volumetric input of air from the air curtain units 26 is substantially equal to the volumetric output of air from the fans 30. This ensures that substantially no movement of air occurs at the entrance 14 and exit 18 to the housing 12. Further, a neutral plenum 36 is set up on the exhaust side of each air filter 32 which substantially ensures no unfiltered air passes through the exhaust outlet 34.

Detailed Description Text (6):

The above described apparatus 10 provides destaticizing and cleaning of instrument clusters (or other partially assembled items) by substantially removing all dust and/or other foreign particles, and by reducing static charge by in excess of 50%. The apparatus 10 can be set up to run on an automatic basis, and can be monitored and controlled by a computerized control unit. Further, a combination achieved by setting air curtain 27 and fan 30 speed ensures that the apparatus 10 performs in an acceptable manner to the operators in close proximity. That is, no drafts are exhausted, and minimal noise is generated.

Current US Original Classification (1):

15/1.51

CLAIMS:

1. Apparatus for destaticizing and cleaning partially assembled items being transported on a continuously movable line, the apparatus comprising a housing which substantially surrounds the continuously movable line, the housing having an entrance and an exit for the continuously movable line; static reduction means which provides a static reduction zone positioned within the housing through which the continuously movable line passes; air input means which provides air input into the housing, air circulation within the housing, and an air curtain through which the continuously movable line passes; and air exhaust means which exhausts air from within the housing; the volumetric input of air provided by the air input means being substantially equal to the volumetric output of air exhausted by the air exhaust means such that substantially no movement of air occurs at the entrance to and exit from the housing.
2. Apparatus as claimed in claim 1, wherein the air input means comprises a pressure regulator, a filter, a solenoid operated valve, and an air curtain unit.
3. Apparatus as claimed in claim 2 comprising two air curtain units which are spaced apart and positioned to provide air curtains having converging air flows.
4. Apparatus as claimed in claim 3 comprising two static reduction zones which are spaced apart, the arrangement being, in order upstream from the entrance to the housing, the first static reduction zone, the first air curtain unit, the second air

curtain unit, and the second static reduction zone.

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L32: Entry 20 of 25

File: USPT

Nov 28, 1989

DOCUMENT-IDENTIFIER: US 4883542 A

TITLE: Method and apparatus for cleaning containers

Detailed Description Text (7):

In operation the air from chamber 46 is forced through the hoses 42 into the tubes 30 and out through the holes 32 into holes 38 of the ion rods 28, over the core 32 and out of the holes 38 in the lower portion of the ion rods 28. In this manner, an air curtain or air flow from the tubes 30 picks up ions by flowing over the rods and through the core member 38 and washes the containers moving beneath the ion rods 28 on conveyor belt 26 to create an essentially ion free atmosphere. In this manner, there is provided an infinite source of ions which electrically neutralizes the cleaning environment.

Detailed Description Text (8):

As the containers move along the conveyor path and through station 10 they may develop static charges which can accumulate to several thousand volts. These static charges will attract contamination. The ionized air curtain flowing over the containers in the station as mentioned contains positive and negative charges that become an infinite source of ions of either charge to neutralize the container, product particles, conveyor, wiping brushes and everything else within the cleaning environment. This ensures that little or no charge in the environment maintains the attraction between contaminate material and the containers. As a result the brushes can readily wipe the materials from the containers as they move past a series of brushes located adjacent the conveyor belt.

Current US Original Classification (1):134/21Current US Cross Reference Classification (1):15/1.51

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L15: Entry 9 of 11

File: JPAB

Oct 7, 1983

DOCUMENT-IDENTIFIER: JP 58170566 A
TITLE: ELECTROSTATIC COATING METHOD

Abstract Text (1):

PURPOSE: To suppress the scattering of paint particles in electrostatic coating, when the front and rear parts of the body of an automobile are coated, by ejecting the curtain-like streams of air from air ejectors at the front and rear parts.

Abstract Text (2):

CONSTITUTION: Just before the front part of the body W of an automobile arrives at a position just below a paint head 19 in conveying said body W, air is ejected downwards through an air ejector 20 to form the descending curtain-like stream of air. The ejection of air to the rear part of the body W is performed in the same way. Accordingly, the scattering of paint to a coating layer formed on the preceding body is suppressed so as to prevent color blushing.

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L16: Entry 24 of 39

File: USPT

Oct 21, 1975

DOCUMENT-IDENTIFIER: US 3914477 A

TITLE: Method of coating and drying strands

Detailed Description Text (1):

Viewed most simply, the present invention envisions apparatus and technique for subjecting, in a continuous production line fashion, a plurality of bundles, cables, cords, or a plurality of linear elements, to a drying step by the expedient of passing the strands, disposed in horizontal, closely spaced relationship, between offset alternate lower and upper jet nozzles adapted to issue vertically directed curtain-like streams of a heating medium of sufficient velocity, and the jet nozzles being of sufficient number and of appropriate spacing to maintain the mutually parallel array of elongate members in pneumatically suspended disposition between the opposed sets of nozzles carried, as it were, by the curtain-like streams. The rapidly moving medium fulfills thereby a dual function; namely, drying and, at the same time, the pneumatic air suspension of the linear elements being subjected to drying.

Detailed Description Text (27):

While the drawings and the foregoing language illustrate and describe the movement of the cords as horizontal, it is within the broad purview of the present invention to provide for movement of the generally mutually parallel array of strands additionally in either a vertical or in inclined path through the oppositely moving curtain-like streams of drying or heating medium since certain, if not all, of the above-enumerated objects of the present invention are accomplished with either of these paths, e.g., vertical or inclined. However, the horizontal movement of the array of strands as previously described is the preferred approach. Thus, in the case of a broken strand, a restarting or rethreading of the broken strand is accomplished more easily when the strands are moving horizontally. Additionally, a horizontal production line which is inclusive of strand supply means, alignment means, impregnation means, drying means and winding means is more conducive to increased throughput and consequent increased production.

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L16: Entry 28 of 39

File: USPT

Aug 6, 1974

DOCUMENT-IDENTIFIER: US 3827639 A

**** See image for Certificate of Correction ****

TITLE: DRYING CHAMBER APPARATUS

Detailed Description Text (1):

Viewed most simply, the present invention envisions apparatus and technique for subjecting, in a continuous production line fashion, a plurality of bundles, cables, cords, or a plurality of linear elements, to a drying step by the expedient of passing the strands, disposed in horizontal, closely spaced relationship, between offset alternate lower and upper jet nozzles adapted to issue vertically directed curtain-like streams of a heating medium of sufficient velocity, and the jet nozzles being of sufficient number and of appropriate spacing to maintain the mutually parallel array of elongate members in pneumatically suspended disposition between the opposed sets of nozzles carried, as it were, by the curtain-like streams. The rapidly moving medium fulfills thereby a dual function; namely, drying and, at the same time, the pneumatic or air suspension of the linear elements being subjected to drying.

Detailed Description Text (27):

While the drawings and the foregoing language illustrate and describe the movement of the cords as horizontal, it is within the broad purview of the present invention to provide for movement of the generally mutually parallel array of strands additionally in either a vertical or an inclined path through the oppositely moving curtain-like streams of drying or heating medium since certain, if not all, of the above-enumerated objects of the present invention are accomplished with either of these paths, e.g., vertical or inclined. However, the horizontal movement of the array of strands as previously described is the preferred approach. Thus, in the case of a broken strand, a restarting or rethreading of the broken strand is accomplished more easily when the strands are moving horizontally. Additionally, a horizontal production line which is inclusive of strand supply means, alignment means, impregnation means, drying means and winding means is more conducive to increased throughput and consequent increased production.

WEST**End of Result Set**

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L16: Entry 39 of 39

File: DWPI

Jun 30, 1982

DERWENT-ACC-NO: 1982-H6630E

DERWENT-WEEK: 198226

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TITLE: High-capacity forced-air dryer for fruit - has roller conveyor running beneath nozzles of warm-air plenum

Basic Abstract Text (1):

The fruit dryer comprises a roller conveyor passing through an elongate drying chamber. An air plenum having transverse nozzle openings is disposed above the conveyor and directs a series of curtain-like streams on the fruit below. The major portion of the air within the dryer is recycled by a fan while a smaller portion is exhausted by a second fan.

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L22: Entry 2 of 17

File: USPT

Sep 12, 2000

DOCUMENT-IDENTIFIER: US 6117620 A

TITLE: Method of producing a calibration disk

Detailed Description Text (24):

The air knives 94, 94' are used to direct a shaped stream of partially ionized air onto each surface of the disk as it moves into the subcompartment. The air knives are nozzles which form a fan shaped air flow pattern which strikes the disk surface in a cross section of relatively narrow height, but with a width extending across the diameter of the disk. The action of the air streams is to blow off loose particles from the surfaces which might otherwise be detected as a defect in the disk. If the scan is performed when the disk is moving downward, then the entire disk will have passed through the air knives prior to the start of the scan. It is preferable to turn the air knives off when the scan is actually being performed to minimize vibrations which might introduce noise into the data. It is also preferable that the air knives provide approximately equal force on the surfaces of the disk so that the net force on the disk is minimal and the disk can be supported without clamping. Preferably the air coming into the subcompartment will be relatively clean. In addition to optionally operating the LIT in a clean room environment, additional filtering may be advantageous. For example, a HEPA filter may be conveniently installed above the subcompartment so that filtered air can be forced into the top of the subcompartment and out of the beam ports in the air baffles. There will also be a slight air flow out of the bottom of the subcompartment through the entrance port used to lift the disk into the subcompartment to help reduce contamination from other parts of the apparatus.

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L22: Entry 9 of 17

File: USPT

Sep 15, 1998

DOCUMENT-IDENTIFIER: US 5806137 A

TITLE: Washing of wafers and wafer washing and drying apparatus

Detailed Description Text (13):

Air blowers 24 and 25 are disposed beneath the partitioned room 50, and connected to air knives (nozzles) 21 disposed in the drying unit 6.

Detailed Description Text (28):

The pair air knives have their nozzle tips directed toward the slice surfaces of wafer 10 for blowing out air obliquely upstream.

WEST

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L22: Entry 10 of 17

File: USPT

Apr 15, 1997

DOCUMENT-IDENTIFIER: US 5619808 A

TITLE: Apparatus for blowing air at a length of textile fabric

Brief Summary Text (12):

In modern injector technology, injector nozzles generate large volumetric flows--based on a small amount of compressed air supplied via a line (any other gas may be used as the air). By the inflow of a certain volume of compressed air into an injector nozzle--depending on its geometrical construction--a multiple of the ambient air is aspirated (from the surroundings of the nozzle) and expelled in accelerated fashion. With commercially available injector nozzles, the amplification factors vary on an order of magnitude of between 1:10 and 1:25. The cross section of the applicable compressed air supply line can be correspondingly small. Injector nozzles, which are also known on the market as Coanda, Venturi, ejector and transvector nozzles, are therefore suitable gas accelerating means.